


# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

Applicant's or agent's file reference P3P2004279		<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/JP2005/000441	International filing date (day/month/year) 07.01.2005	Priority date (day/month/year) 09.01.2004	
International Patent Classification (IPC) or both national classification and IPC INV. B22D19/00 F02F1/10			
Applicant TOYOTA JIDOSHA KABUSHIKI KAISHA et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input checked="" type="checkbox"/> Certain defects in the international application</p> <p>VIII <input checked="" type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand  14.10.2005		Date of completion of this report  07.04.2006	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer  Luta, D  Telephone No. +49 89 2399-7333	



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/JP2005/000441

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-43 as originally filed

**Claims, Numbers**

1-8 as originally filed

**Drawings, Sheets**

1/16-16/16 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
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International application No. **PCT/JP2005/000441**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	1-8
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-8
Industrial applicability (IA)	Yes: Claims	1-8
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/JP2005/000441

Re Item V.

**AP20 Rec'd PCT/PTO 10 JUL 2006**

- 1 Reference is made to the following document:  
D1 : US 2002/157571 A1 (TAKEO ARAI ET AL) 31 October 2002 (2002-10-31)  
D2: WO 03/095129 A1 (HONDA GIKEN KOGYO KABUSHIKI KAISHA) 20  
November 2003 (2003-11-20)  
D3: EP-A-1 110 644 (TEIPI INDUSTRY CO., LTD; TEIKOKU PISTON RING CO.  
LTD) 27 June 2001 (2001-06-27)
- 2 INDEPENDENT CLAIMS 4 and 6
- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 4 and 6 does not involve an inventive step in the sense of Article 33(3) PCT.

Document D1 discloses a method for manufacturing a cylinder liner for insert casting, in which the method of centrifugal casting is used, with the following features (the references in parentheses applying to this document):

the mold wash contains:

refractory material (heat insulating agent: diatomaceous earth, silica sand or zircon) 15%-25% by mass,  
binder (bentonite) 4%-8%, by mass,  
water 68.9%-80.995% by mass  
and a surfactant (surface active agent) 0.005%-0.1% by mass (s. table 1 and 2 samples 1 to 37);

the mold wash is applied to an inner surface of the mold that has been heated and is being rotated (paragraph 21, figures 1A-2D);

a recess is formed to each bubble in the mold wash layer, so that a recess with constriction (**crater shaped recessed holes**) is formed in the mold wash layer (s. paragraph 21, last sentence);

molten metal is poured into the mold in which the mold wash has been dried (s.

paragraph 22).

The subject-matter of claims 4 or 6 therefore differs from this known method for manufacturing a cylinder liner in that: the poured metal is cast iron.

Cylinder liner which are casted from cast iron are normally used in the internal combustion engines (s. for example D2 paragraph 11), therefore the solution proposed in claims 4 and 6 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT).

**3 INDEPENDENT CLAIM 5**

Claim 5 comprises a selection of the features of claims 4 and 6, therefore it is also not inventive.

**5 DEPENDENT CLAIMS 7 and 8**

Dependent claims 7 and 8 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step (Article 33(2) and (3) PCT) (D1 mentions 1 mm thickness of the mold wash -paragraph 27 and the particle size of the refractory material is given in D3) .

**7 INDEPENDENT CLAIM 1**

7.1 Document D1, which is considered to represent the most relevant state of the art, discloses a cylinder liner for insert casting, having a plurality of projections each having a constrictions on an outer circumferential surface, the height of the projections being less then 1 mm (s. paragraph 22 and 27 of D1):

From this, the subject-matter of independent claim 1 differs in that a certain geometry and distributions of the projections is claimed.

7.1.1 The subject-matter of claim 1 is therefore novel (Article 33(2) PCT)

7.1.2 However the skilled man employing the casting method of D1, which is the same as the one of claims 4, 5 and 6, will obviously reach a similar geometrical

shape and distribution of the projections. Therefore subject-matter of claim 1 is considered as not involving an inventive step (Article 33(3) PCT).

8 The same argumentation applies to claims 2 and 3.

**FURTHER COMMENTS**

Independent claim 2 comprises all the features of claim 1 and is therefore not appropriately formulated as a claim dependent on the latter (Rule 6.4 PCT).

Independent claims 4 and 6 comprise all the features of claim 5 and are therefore not appropriately formulated as claims dependent on the latter (Rule 6.4 PCT).

Although claims 4 and 6 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.